



PRESERVATIONS OF E-RESOURCES: TOOLS & TECHNIQUES

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ABSTRACT

The Present Century Libraries and Archives play a vital role in organizing, preserving, and providing access to the cultural and historical resources of society. In the relatively stable world of printed, hand-written, and mechanically reproduced information, repositories managed to preserve a rich collection of scholarly communications, documentary evidence, and valuable information for specialized scholars and for the wide-ranging public. The opening of digital technologies into the processes of manufacture, sharing, and storage of information challenges the power of libraries, archives, museums, and other cultural institutions to take out their responsibilities for preservation. The Purpose of preservation is to ensure protection of information of enduring value for access by present and generations. This paper is explain about important of digital preservation, tools and challenges in modern era.

KEY WORDS: E-Resource preservation, Types, Techniques, Tools, Challenges, Advantages and Disadvantages.

INTRODUCTION:

Information preservation is one of the most important issues in human history, culture, and economics, as well as the development of our civilization. While earliest information was recorded in carvings on stone, ceramic, bamboo, or wood, the development of civilization paved the way for new storage media and techniques for recording information, such as writing on silk or printing on paper. Eventually we were able to put photographic images on film and music on records. A revolutionary change occurred in the information storage field with the invention of electronic storage media. In view of modern information preservation requirements, this paper will focus on the aspects of the technical strategies used for E-Resource preservation in the modern libraries.

E-Resource preservation has become a frequent topic in digital library study and development for several reasons. First, digital libraries have gone through a change from research and experimental projects to an important part of the infrastructure for research and teaching. In various scientific fields, research depends on access to persistent stores of digital information that are built and refined continuously. Consistent with the cumulative nature of scholarly research, journals that report research findings and that make references to previous studies constitute a continuous record of research and discovery. As scholarly communications have shifted rapidly from print-based journals to either hybrids of print and electronic journals or to exclusive publication in digital form, the need to preserve a comprehensive record of research and scholarly achievement has not diminished. Moreover, libraries, archives, and other organizations have made considerable investments in acquiring digital content and in converting older print-only materials into digital form to improve access to disparate sources that were difficult to locate and retrieve. According to the 1998-1999 statistics from the Association of Research Libraries, major research libraries in the United States spent between slightly less than three percent to more than twenty-one percent of their acquisition budgets on electronic journals and other digital resources. Few aspects of contemporary society and culture are untouched by changes in the creation, distribution, and access to information. There have also been concerted efforts to raise awareness of the preservation issues associated with new information technologies out of concern over the survival of digital information to document this rapid shift in communications.

E-RESOURCES:

Preservation of e-resources is "particularly challenging due to extensive diversity and complexity of data structures in use over time and across the publishing community" An electronic resource is defined as any resource, which requires computer access. Any electronic product that delivers a collection of data, be it text referring to full text bases, electronic journals, image collections, other multimedia products and numerical, graphical or time based, as a commercially available title that has been published with an aim to being marketed. These may be delivered on CD ROM, on tape, via internet and so on. The rapid development of electronic information resources has changed the physical and service features of our libraries. It is currently undergoing a rapid and dynamic rapid revolution on leading to new generation of library collection with an emphasis on e-resources. Hence, preservation of e-resources is major challenges in libraries.

E-RESOURCE PRESERVATION:

The term 'E-Resource preservation' means the planning, resources allocation, and application of preservation methods and technologies necessary to ensure that digital information of continuing value remains accessible and usable.

According to Coalition (2006) describe the digital preservation as "all activities that are required to maintain access to digital materials beyond the limits of media failure or technological change. Those materials may be digital records created during the day-to-day business of an organization, i.e. "born-digital" materials created for a specific purpose (e.g. teaching resources), or the products of digitization projects".

DEFINITIONS OF DIGITAL PRESERVATION⁴:

American Library Association (ALA) defines as follows:

Short Definition: Digital preservation combines policies, strategies and actions that ensure access to digital content over time.

Medium Definition: Digital preservation combines policies, strategies and actions to ensure access to reformatted and born digital content regardless of the challenges of media failure and technological change. The goal of digital preservation is the accurate rendering of authenticated content over time.

Long Definition: Digital preservation combines policies, strategies and actions to ensure the accurate rendering of authenticated content over time, regardless of the challenges of media failure and technological change. Digital preservation applies to both born digital and reformatted content. Digital preservation policies document an organization's commitment to preserve digital content for future use; specify file formats to be preserved and the level of preservation to be provided; and ensure compliance with standards and best practices for responsible stewardship of digital information.

TYPES OF E-RESOURCE PRESERVATION:

Bitstream: in its simplest form, a digital object consists of a bitstream, i.e. an ordered sequence of bits (binary zeros and ones). This binary inscription will usually be stored on a physical medium of some kind. A computer system with the correct combination of hardware or software translates the bitstream into something meaningful.

File: A named and ordered sequence of bytes known by an operating system. The format of a file is laid out in the format specification, which transforms the file from its binary ones and zeros into something which makes sense to a user, i.e. stipulating the proper encoding, sequence, arrangement, size and internal relationships which enable the construction of a valid file of the relevant type. This level represents the transformation of the input bitstream into output for presentation purposes; the physical medium on which the bitstream is inscribed is therefore of no consequence at this level.

Representation: denotes the set of files needed for a complete and reasonable rendition of an Intellectual Entity. This is defined by PREMIS as a coherent set of content that can reasonably be described as a unit; this is essentially a conceptual object, or something that a human can understand as a meaningful unit of information, e.g. a website, a report, a photograph. An Intellectual Entity or conceptual object may have one or more digital representations or encodings; for instance, the text of a politician's speech might be saved as both a Microsoft Word document and a PDF file. The underlying encoding of each will differ considerably, but the textual content of each item is identical. A Representation may also be made up of one or more Files, and it is important that the relationships between such component files are clear.

TECHNIQUES OF E-RESOURCE PRESERVATION:

Migration and emulation are the two primary strategies used for long-term preservation. Migration engages with convert the digital content from its obtainable layout to a different format that is working and available on the technology in current use [3, 12].

Emulation involves developing software that reproduce earlier hardware and software. Migration is a strategy that requires a deep understanding of the content being preserved, whereas emulation is a more technology-based strategy, requiring a deep understanding of existing hardware and software [3, 12].

TOOLS OF E-RESOURCE PRESERVATION:

Digital Preservation should be modular and flexible, to ensure it is sustainable. A combination of tools and technology that are currently available may be the most cost-effective means of achieving this flexibility [14]:

- *Digital Record Object Identification (DROID)*: a software tool developed by The National Archives to perform automated batch identification of file formats. JHOVE: a tool developed by JSTOR and Harvard University Library to allow the automatic identification, validation and characterization of a range of digital object types.
- *Format Curation Service (FOCUS)*: a prototype tool which will perform identification and validation on submitted files.
- *XML Electronic Normalizing of Archives (XENA)*: a tool for converting a range of file formats to XML representations, used in normalization.
- *Community Owned Digital Preservation tool registry*: COPTR
- *Digital Curation Centre suite of tools*: DCC
- SPRUCE project, including a Digital Preservation Business Case toolkit: SPRUCE
- *Conversion and Recommendation of Digital Object Formats (CRIB)*: an online migration tool, which recommends optimal migration alternatives, undertakes the conversion process, evaluates the outcome of the migration and generates migration reports in appropriate forms for inclusion in preservation metadata records. It currently supports migration paths for a number of image formats, but can be scaled to provide for other formats.

CHALLENGES OF E-RESOURCE PRESERVATION:

- The quantity and development of the amount of material to be maintained
- Well-known use of relatively unstable media
- Rapid changes in the availability of hardware, software and other technology required for access
- The various and frequently changing range of file formats and standards
- The high cost of taking action
- New models of ownership the enforce and other right based constraints.

ADVANTAGE OF E-RESOURCE PRESERVATION:

- There is no limit for storing
- It can be work via the internet So we can access any where
- Available accessed
- Generate saving space
- Preservation of older texts/manuscripts
- Easy retrieval of information using key words
- It is cheaper to maintain digital library than book library
- No limit for create digital files can be duplicated with exactness
- Everybody use digital file at the same time
- built-in online resources sharing
- Connecting as well as networking possibilities

DISADVANTAGE OF E-RESOURCE PRESERVATION:

- *Copyright*: Digitization is the process of converting a work into a binary language that can be read by a computer. Digitization involves storing in an electronic medium such as the hard disk of a computer or External Disk. The copyright act classifies such storage as reproduction, which is an exclusive

right of the owner of the copyright in the work if the work is still in the copyright regime.

- *Speed of Access*: Speed of the accessible information is in higher side. Networks connected through worldwide, so easy to access
- *Digitalization Cost is high*: cost of digitization of the library is very higher side.
- *Band width*: Digital library will require high bandwidth for transfer of multimedia resources, but the band with is decrementing day by day.
- *Efficiency*: Due to digitization access and retrieve information efficiently.
- *Environment*: Digital libraries cannot provide a traditional environment, people would like to read printed materials; it is not possible in a digital environment.
- *Preservation*: Due to technological developments, a digital library can rapidly become out-of-date and its data may become inaccessible.

CONCLUSION:

Preservation of library material is most serious problem in today's librarianship. Libraries are more concentrating on dissemination of information than the preservation of library materials. Techniques for organizing and disseminating information are developing fast, but conservation field is still neglected. If due attention is not given for the conservation of library material, then there is every possibility that our cultural heritage and "nations collective" memory may disappear. The cultural heritage of the nation in the form of old books and manuscripts the knowledge contained in it may be permanently lost if it is not properly preserved for future generation.

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